

Mr. WHITE. Yes. I made prints where the metal parts of the rifle, that is, from the muzzle to the trigger guard, were all identical lengths.

Mr. GENZMAN. After lining up the metal parts, what did you determine about these stocks?

Mr. WHITE. I determined that the butts were different lengths after lining up the metal parts.

Mr. GENZMAN. Does the photograph at the bottom demonstrate this discrepancy in the length of the stocks?

Mr. WHITE. Yes. Here we have the Archive rifle printed in brown, the Warren report rifle printed in red; all the way from the muzzle through all the metal parts, in fact all the way to the comb, which is this little notch in the stock of rifle. All of that matches exactly. Only from here back, less than one-fifth length of the rifle, does not match.

Mr. GENZMAN. Briefly what did you determine from your study?

Mr. WHITE. It is my opinion that we have been shown by the authorities more than one gun as being the assassination weapon.

Mr. GENZMAN. Thank you, Mr. White. Mr. Chairman, I have no further questions.

Chairman STOKES. Mr. Goldsmith?

Mr. GOLDSMITH. Mr. White, I just have one question.

Mr. WHITE. All right.

Mr. GOLDSMITH. When you did this study, did you compute photogrammetrically the effect of tilt on the way that the length of an object appears in a photograph?

Mr. WHITE. I conducted a study by photographing a yardstick from three different—

Mr. GOLDSMITH. Mr. White, answer my question. Did you compute photogrammetrically—

Mr. WHITE. What is "photogrammetrically"? Describe to me what "photogrammetrically" is.

Mr. GOLDSMITH. I just have one more question Mr. White. Do you know what photogrammetry is?

Mr. WHITE. No.

Mr. GOLDSMITH. I have no further questions. Thank you.

Chairman STOKES. The committee will recess until 1:30 p.m. this afternoon.

Mr. FITHIAN. Mr. Chairman.

Chairman STOKES. Yes, proceed.

Mr. FITHIAN. Will Mr. White be back after the recess?

Chairman STOKES. He will be back.

Mr. FITHIAN. Thank you.

[Whereupon, at 12:30 p.m., the select committee was recessed, to reconvene at 1:30 p.m.]

#### AFTERNOON SESSION

Mr. FITHIAN. The committee will come to order.

I will ask Mr. White to take the stand. While he is doing that, let me explain where we are before the House now.

Apparently, in about 12 minutes or so the resolution for the funding of this committee will be considered. During that time, of course, the members of the committee will need to be on the floor

and there will be a recess. It is not anticipated that that will be a long debate. Then, I believe, Mr. Blakey, we will reconvene and proceed.

Mr. Goldsmith, I believe, has just a couple of more questions. I had two very brief ones, and so, a matter of 4 or 5 minutes, Mr. White.

Mr. GOLDSMITH. Mr. White, actually I have no further questions to ask you. I would simply like to make a few comments and they are as follows: The committee is very much aware of the assistance that you have offered to us. We are aware of the work that you have performed in this field and the committee is thankful for the work of people such as yourself who have served greatly to assist us in identifying the issues in the area of the photographic evidence that need to be resolved.

I might add that at least I am aware that at some time you served as a consultant to this committee, and although you are not at this time affiliated with the committee's photographic evidence panel, that your work has been made available to that panel for analysis. In that regard I would simply state, were it not for people such as yourself, this committee would probably not be here today examining the scientific issues.

Again, sir, I would like to thank you very much.

#### TESTIMONY OF JACK D. WHITE—Resumed

Mr. WHITE. Thank you. I appreciate the opportunity to present this as a private citizen who has no large budget to work with. I am just an ordinary person who has observed lots of things and I am really here to present questions rather than answers.

Mr. GOLDSMITH. We appreciate that. Again, thank you.

Mr. FITHIAN. Mr. White, you are in a professional advertising business, right?

Mr. WHITE. Yes, sir.

Mr. FITHIAN. My contacts with that business have been usually geared to certain times of the even-numbered years, but I believe it is correct to say that people doing outdoor advertising and doing brochure layouts, et cetera, would turn us down cold in their own professional work if we sent them second, third, or fourth generation material and they would insist on first generation material; isn't that correct?

Mr. WHITE. Yes. You would be better off using originals. In my tests, as I told the committee, I had no large budget to work with. In all my studies I made use of materials that were available to me.

Mr. FITHIAN. But in your professional work you would always push for first generation?

Mr. WHITE. Yes, I recommended to the committee that they secure originals, the closest generation original to all of these things to study.

Mr. FITHIAN. You have anticipated my second question, then, which was just again to clarify the record.

I was sure, being the professional that you are, that you would not have sought or asked for third generation films.

Mr. WHITE. Definitely not.

Mr. FITHIAN. Did the National Archives ever tell you which generation you received?

Mr. WHITE. I didn't ask. I asked for the best copy I could get of CE-133-A and CE-133-B.

Mr. FITHIAN. In your experience in commercial art, I take it it would make a difference certainly along the edge lines and the soft edges as I think the term is used, it would make a difference which generation of print was used and how sharp the clarity of the things were? There is a quality difference, isn't there?

Mr. WHITE. That depends. In some cases there is and in some cases it is negligible. The most noticeable difference of the photocopy from the original is in contrast. You hardly ever in a good photocopy will lose significant detail, but you will increase contrast so that the dark areas are generally darker and the light areas are generally lighter.

Mr. FITHIAN. Mr. Thone, this concludes my questions of the witness. Do you have any questions?

Mr. THONE. No, Mr. Chairman.

Mr. FITHIAN. Mr. White, it is the custom of this committee to permit the witness at the conclusion of his or her testimony an additional 5 minutes to clarify, amplify or modify or comment on any testimony. We would offer you that time now.

Mr. WHITE. I don't have too much to say except to thank the committee.

There was one area of questioning which I had hoped to get into, which because of the shortness of time before lunch I was not permitted to go into. That is the question of the DeMohrenschildt picture.

The DeMohrenschildt picture shows a much larger amount of background around the edges than any of the photographs, 133-A, B or C. To me this indicates that the DeMohrenschildt picture is printed full negative. In fact, we can verify this because it is printed with a black border around the edge, the black border being the clear area around the edge of the negative.

According to the FBI, the picture, CE-133-B, was identified as being taken with Oswald's camera because it could be matched to the film plane aperture. Yet if the DeMohrenschildt picture shows a larger background area and it is taken from the same camera viewpoint, then 133-A, B and C have all been cropped and, therefore, if there is more background area in the picture, then it could not possibly be matched to the film plane aperture. Other than that, I have no additional comments.

Mr. FITHIAN. Thank you, Mr. White. You are excused. We want to thank you for coming today.

Mr. WHITE. Thank you.

Mr. FITHIAN. Professor Blakey.

Mr. BLAKEY. Mr. Chairman, I would note one thing for the record before making a comment.

Proving the universal usefulness of the eraser on a pencil and thus its applicability to, me and I suppose to committee staff as to all others, I have had drawn to my attention what I hope is a typographical error in the narration this morning.

When I was discussing the conclusions of Mr. Shaneyfelt, as to the first conclusion, I indicated that he had determined that the

margin irregularities on the negative of 133-A were identical, et cetera.

I should have—and I express my regrets to the committee and those who listened—I have said 133-B. I apologize for my error.

Mr. Chairman, if it would be appropriate on this occasion to make two additional comments: The committee sought testimony from a number of people who had special expertise in the area of photographic analysis and had taken public positions on the forged or fake character of the backyard photographs. One individual appeared on the BBC program shown this morning.

In August a representative from the committee talked with Mr. Thomson in Edinburgh, Scotland concerning his examination of the backyard photographs and the conclusions he drew as a result. He was shown various technical reports compiled by the committee's photographic evidence panel which addressed the issue of the authenticity of their backyard photos and was asked to comment, and in addition, offered an opportunity to appear before the committee and express his views.

After studying the reports, Mr. Thomson deferred to the panel's conclusions that the photographs revealed no evidence of faking, noting the thoroughness of their investigation and emphasized that the opinions he expressed earlier were based on examination of copies of photographs, not the original negatives and first generation prints as had been the case in the photographic panel analysis process.

Mr. Thomson did, however, reserve his opinion on the chin in the backyard pictures which is suspiciously different from the chin he had observed in the Dallas arrest photographs of Oswald. He also remained skeptical as to the ability of a computer to detect a photocopy composite photograph.

In addition, the CBC program of "Fifth Estate" included comments from J. M. Pickard, a photographic expert with the Department of Defense in Canada. Mr. Pickard was asked about his public opinions that the photographs were fake.

He indicated to the committee staff that he spent less than 1 hour in preparing for the public airing of his comments and he made no scientific analysis of the photographs before offering his public opinion. Mr. Pickard was not available to testify here today.

In light of the impending vote, Mr. Chairman, it might be appropriate to take a recess at this time and come back to the photographic panel this afternoon.

Mr. FITHIAN. Let the Chair note that I am advised that the funding resolution has now been called up on the floor. For those of you who plan to join the hearings later this afternoon, it is my judgment, though I could be wrong, that it will not be a long debate, although I suspect from the vantage point of the committee a serious one.

If you are watching clocks or bells in the building or even in this room, in all probability the first two bells or two light signals will be the vote on the final passage of the funding resolution. We do not anticipate any amendments to the resolution.

Therefore, if you want to gear or time your own activity, I would guess you can probably tell when the next two lights go on that that will be a vote. There will be a 15 minute voting period follow-

ing that and the committee should be then back in session within 15 minutes of the next two bells. If you want to be very scientific about it, dial 57400 and find out whether or not that is the final passage vote.

The committee stands adjourned subject to the call of the Chair. I am told that we might be done by 2:30 p.m.

[A brief recess was taken.]

Chairman STOKES. The committee will come to order.

The Chair recognizes Professor Blakey.

Mr. BLAKEY. Thank you, Mr. Chairman.

Early in 1978 the committee convened a panel of experts with varied backgrounds in the photographic sciences to study all photographic evidence related to the assassination. The panel's expertise included: Analog photographic enhancement, digital image processing, photogrammetry, photo interpretation and forensic photography. Resolving the controversy of the backyard photographs was a prime objective.

Because the quantity of material to be examined was large, the technical projects were contracted to several laboratories. The photo-optical, analog enhancement work was done by a team of professors at the Rochester Institute of Technology. The image processing work was done by the University of Southern California Image Processing Institute, the University of California Los Alamos Scientific Laboratory, and the Aerospace Corporation.

The photographic panel met with representatives of the laboratories in February 1978. The analytical work began in March and proceeded, subject to the panel's review, until mid-July.

The most advanced technology available to the committee was applied to the photographic evidence. In addition to the original negative and first generation prints of exhibits 133-A and B examined by the Warren Commission, the panel examined the first generation prints obtained from Dees, De Mohrenschildt and Stovall. The additional prints allowed a more comprehensive investigation than that of the Warren Commission.

Two representatives of the photographic panel are here today to present the panel's findings: Mr. Calvin S. McCamy whom the committee has heard from previously and Sergeant Cecil W. Kirk.

Sergeant Kirk has served 17 years with the Identification Branch of the D.C. Metropolitan Police Department. He supervises the branch's mobile crime laboratory and the Photographic Services Unit, which produces about 30,000 forensic photographs per month, and which, I should note, Mr. Chairman, has been extremely helpful to this committee in producing photographs in connection with our hearings.

Sergeant Kirk has studied forensic photography at the University of Louisville Southern Police Institute, the FBI Academy, and the University of Maryland. He has received the Photographic Craftsman Degree from the Professional Photographers of America.

Sergeant Kirk is an instructor of forensic photography at the University of Maryland and the Virginia Academy of Forensic Sciences. He is a guest lecturer at Central Missouri State University and the FBI Academy. He is the author of numerous professional articles in the field of photography and is the vice president of

the Evidence Photographers International Council and who I should note, Mr. Chairman, has been extremely helpful to this committee in producing photographs in connection with these hearings.

Mr. McCamy received his B.S. degree in chemical engineering and an M.S. degree in physics from the University of Minnesota. He has taught mathematics at the University of Minnesota and physics at Clemson University. For 18 years he was with the National Bureau of Standards where he was chief of the image optics and photography section. He is the author of the National Bureau of Standards handbook on the examination of microfilm. Currently he is vice president for service and technology of the Macbeth division of Kollmorgen Corp.

Mr. McCamy is chairman of the photographic standards management board of the American National Standards Institute. That board is responsible for all photographic standardization activity in the United States, including such matters as ASA film speeds. He is also chairman of the standards committee of the American Society of Photogrammetry.

Mr. McCamy is a fellow of the Optical Society of America, the Society of Motion Picture and Television Engineers, and the Society of Photographic Scientists and Engineers. He has served on the editorial review boards of several technical journals and has authored numerous professional papers. He has, of course, already testified before the committee.

Mr. Chairman, it would be appropriate at this time to call Mr. McCamy and Sergeant Kirk.

Chairman STOKES. The committee calls both of these gentlemen at this time. I am going to ask you to raise your right hand and be sworn.

Do you solemnly swear the testimony you will give before this committee is the truth, the whole truth, and nothing but the truth, so help you God?

#### TESTIMONY OF CALVIN S. McCAMY AND SGT. CECIL W. KIRK

Mr. McCAMY. I do.

Sergeant KIRK. I do.

Chairman STOKES. Thank you, you may be seated. The Chair recognizes counsel, Mr. Genzman.

Mr. GOLDSMITH. Mr. Chairman, I believe that I am going to be handling the questioning this afternoon.

Chairman STOKES. I am sorry.

Mr. Goldsmith.

Mr. GOLDSMITH. Thank you. Sergeant Kirk, would you state for what purpose the committee's photographic evidence panel was asked to examine the backyard photographs showing Lee Harvey Oswald and a rifle?

Sergeant KIRK. To make a determination whether the photographs were authentic or fakes.

Mr. GOLDSMITH. I would like to refer your attention to what has been marked as committee exhibit 178 which is the flow chart on the right.

I would like to ask you how many different backyard pictures showing Oswald with the rifle was the panel given to examine?